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HON 403
Professor Fallon

Thesis: How Voice Classification Affects Young Singers

Abstract

Most young classical singers will encounter different vocal pedagogues with different and sometimes opposing methods. One of the main aspects of training a young singer is deciding what voice type they should train in, a decision that should not be made solely by the student or the teacher. There is ambiguity over when and how it is appropriate to classify a young singer's voice type. Some pedagogues recommend forgoing any classification in favor of a more singing foundation-based teaching in early vocal development. Some teachers claim certain vocal exercises will help determine the correct voice type. Other studies have attempted to standardize voice types with use of technology such as the Long term average spectrum or examination of vocal tract lengths. With a better understanding of how voices types are defined and developed, the singer will be better able to proceed with their vocal development with more awareness as to not manipulate, and to potentially damage, their voice.

Introduction

Classical singers experience a great number of challenges as they traverse their careers: a competitive job market, often a lack of job stability and benefits, and performance anxiety, to name a few. In the operatic world, a singer's job title is defined by his voice part. With what is known about the defining characteristics of each voice type, finding the right voice part to train in should not be a challenge for the classical singer, yet somehow singers are still misclassified.

Like most young classical singers, my singing career started in a choral setting. Voice parts for in this setting were determined solely by vocal range. Male voice parts include: tenor,

baritone, and bass. A tenor's range falls between C₃ and C₅. A baritone's range falls between G₂ and G₄. A bass' range falls between E₂ and E₄. I sang bass in my first few choirs because I was able to sing lower notes. I sang baritone in my later choirs because I could not sing the higher notes. Naturally at the start of my undergraduate study, I wanted to sing baritone. I was so married to the idea of being a baritone that singing tenor was not even an option in my mind. As a result of this strong sense of identity, at least half of my undergraduate study was spent singing baritone repertoire and choosing lower transpositions of songs.

Prior to my undergraduate study, I would listen to more mature baritones to learn pieces. Hours were spent listening to their interpretation, musicality, and tone, which was especially rich and dark. Naturally, emulation of that rich, dark sound resulted, but there was nothing natural about the way the sound was produced. The combination of extreme tension in the tongue and over darkening of vowels made my voice sound more like a baritone, and it also prevented me from accessing any higher notes. Despite this fact, I had grown accustomed to this sound, and I believed that this was my singing voice.

As I progressed to the second half of my undergraduate study, I was presented with repertoire that was increasingly higher in tessitura, or the most musically acceptable and comfortable range for a singer. My habits of making a baritone sound kept returning and impeding my progress as a singer. The result of the combination of bad habits and harder music was disastrous. After rehearsing a coloratura Handel piece for several hours, my voice had developed a hoarseness that would not go away. The hoarseness lasted for weeks. I had to stop speaking and singing. I went to see an ear, nose, and throat doctor. I missed performance opportunities. This event demanded my reevaluation of the way I was singing.

At that time, what I thought was my singing voice was just a product of the manipulation of the different parts of my throat, a manufactured sound. I failed to acknowledge that I was singing with too much vocal weight, which is essentially how heavy the sound is or how thick the vocal cords are. Vocal weight is a factor in determining voice part, as is tessitura, timbre, agility, and vocal range. The baritone voice naturally has more vocal weight in the sound than a tenor voice would, but within each of the three male voice types, there are even more subcategories. These subcategories are used by opera houses to cast singers in appropriate roles and can be best illustrated by the German voice classification system known as Fach.

According to McGinnis, Fach is the combination of voice, range, size, timbre, physical build, age and experience, desire, and frequency of performance. An explication of Fach will explain why two singers with similar vocal ranges will sing completely different repertoire. Specific voice classifications may be limiting, but they can help guide a singer to the appropriate repertoire. On the contrary, if a singer is misclassified, the repertoire may push a singer's voice beyond its natural capabilities.

In his article *The Danger of Singing Heavy Repertoire with a Lyric Voice*, David Jones recounts how a relatively well-known singer at the time had ruined her lyric voice because she decided to sing more dramatic or heavier repertoire. By pushing her larynx down with her tongue to make a darker and heavier sound, her once easy and beautiful upper range had been replaced with pushing and screaming. This ended her career prematurely.

The purpose of this paper is to not only flesh out the obvious dangers of singing repertoire that is too heavy or too light for a singer's voice type, but to look at the research done and give reasons as to why misclassification still occurs. In essence, how does vocal classification impact the way young singers sing and choose repertoire? Of all the vocal

problems I faced as a singer, the most difficult obstacle I had to overcome was to discharge my tonal model, or identity, as a baritone. It was the root to many of my early vocal problems.

After doing some moderate research, I realized my problems were not exclusive to me. While there are some articles that point out the problem of misclassification among young singers, there is not nearly enough research done to offer a solution. How can we better train our singers? The two most important factors to consider when classifying a singer's voice are how the voice type is classified and when the voice type is classified. With a better understanding of how voices types are defined and developed, the classical singer will be better able to proceed with their vocal development with more awareness as to not manipulate, and to potentially damage, their voice.

Overview of Literature

In his article, "The Boy's Expanding Voice: Take the High Road", Leck claims to have discovered if a boy sings from his high voice to his low range consistently and continues to sing in the old voice while developing the new, the break eventually disappears. What emerges is a three-octave voice without a break.¹ If this is certainly the case, it would revolutionize vocal pedagogy as we know it. For instance, technical issues with the passaggio, the break or the transition between vocal registers, would no longer be an issue, and every singer who trains this way would have an even tone throughout his range. Leck's claim of discovery also led him to the conclusion an unchanged treble voice does not become a tenor or a bass. It is an unchanged treble voice adding a lower register. Tenors and basses do lose some of their highest notes from their unchanged treble voices eventually, basses more so than tenors, so Leck's conclusion requires some minor clarification.

¹ Leck, H, (2009). The Boy's Expanding Voice: Take the High Road. Choral Journal: On the Voice, 49-60.

According to Leck, boys should understand that the unchanged voice is essential to the development of the new voice. It is normally not helpful to emphasize labels such as soprano, alto, tenor, baritone, and bass to unchanged and changing voices. Once the voice has fully changed, the male voice may be classified as a tenor or bass depending on the character or the range of the voice.² Leck is reasonable in desire to deemphasize labels to unchanged voices, however his description on the criteria of how to classify a singer as a tenor or bass is quite thin and not elaborated on. Are the range and character of a voice the most accurate criteria that determine classification? Are there other criteria that exist and could be even more accurate than range and character? These questions will be further examined later in this paper.

Even for university level teaching, Leck believes it is helpful for tenors, baritones, and basses to access their light head voice regularly. This approach is not an attempt to make baritones and basses into tenors, but rather to keep the light head voice connected to the traditional register. In this clause, Leck is not deemphasizing labels, but rather making it a point that all male voices should have the flexibility to access lighter sounds. For instance, a baritone may want to sing a note in his upper range that is neither in full voice or falsetto.

Singing through the break should not be confused with singing on the break. Singing through the break can be reiterated as ascending or descending a scale through different registers. Singing on the break can be described as singing pitches around the transition point in a voice for an extended period of time. For younger singers, singing on the break can be extremely vocally fatiguing. The lack of experience with coordination of switching between registers can cause singers to push or not use enough air when singing.

Leck makes a final point of labeling is very dangerous for changing voices. A boy does not want to be called a soprano or alto. It is not better to buy a SSA (soprano I, soprano II, alto)

² Ibid.

piece than a three-part treble piece and assign singers part I, part II, or part III.³ With society's obsession with labels, it is not uncommon for boys to want to sing low if at all. Boys' reluctance to sing is a well reported issue with a long history.⁴ Boys are indeed wary of "sounding like girls". In Ashley's paper *The angel enigma: experience boy singers' perceptual judgements of changing voices*, research was performed on what well informed 11-14-year-olds understand of the "head voice" that can be used by boys to access the soprano range during the period of voice change. Boys are seldom consulted about this. Ashley's proposition is that vocal pedagogy for 11-14-year-olds might be improved if account were taken of boys' understandings and opinions.⁵

The first case study was of a cathedral chorister who had won the BBC *Chorister of the Year* competition, subsequently securing a recording contract with Sony BMG and performances at venues that include an acclaimed prom concert in the Royal Albert Hall. The boys who were shown footage of the cathedral chorister, after his voice had changed a bit, concluded his higher notes were not falsetto or head voice, but as a "chest voice" forced upwards. The whole group of boys were in agreement that the technique being displayed is probably "not good for your voice". To an extent, young boys are able to identify what contributes to good technique. The significance of this conclusion is that a student's opinion should be considered when attempting to determine voice type. What sounds good and is comfortable to them may change, but voice teacher should exclude their student's opinion.

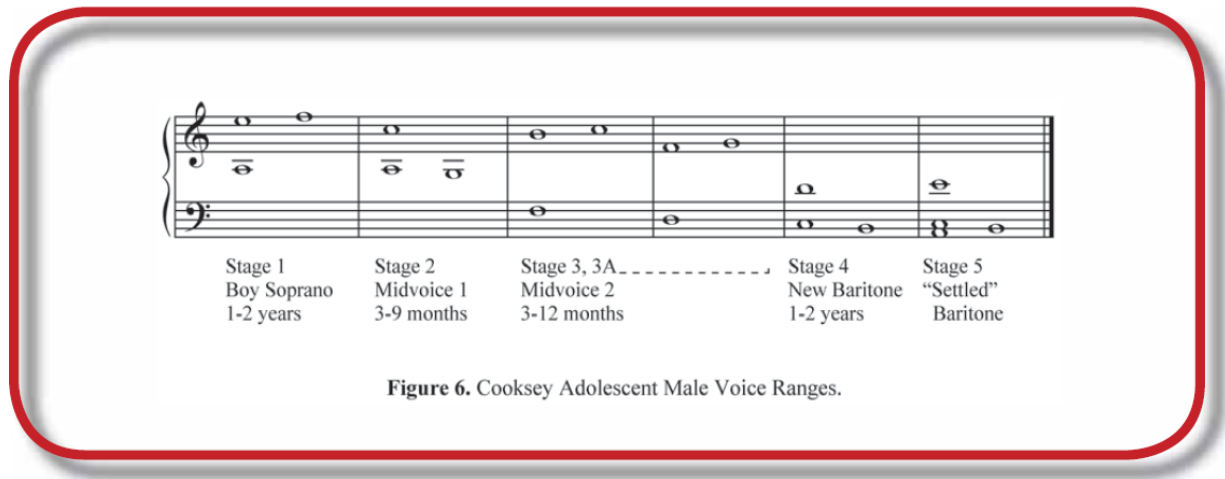
Public schools tend to plough on, largely heedless of the work of Cooksey (Figure 6), a leading authority on the changing boy's voice, moving boys from treble down to alto, tenor, or

³ Ibid.

⁴ Koza, J. (1992). The missing males and other gender related issues in music education, 1914–1924. *Journal of Research in Music Education* 41, no. 3: 212–32.

⁵ Ashley, M. (2011). The angel enigma: experienced boy singers' perceptual judgements of changing voices. *Music Education Research*, 13(3), 343–354. doi:10.1080/14613808.2011.603046

bass in their choirs as they have always though appropriate.⁶ The needs of the choir tend to overshadow the needs of individual singers. The result is boy sopranos retain their upper register with less longevity and sing in potentially harmful voice parts.



A number of people have attempted to understand the boy's changing voice through a system of vocal classifications. In his book *Training the Boy's Changing Voice*, McKenzie⁷ describes the progression of vocal change through what he calls the alto-tenor plan. Basically, this plan suggests a soprano becomes an alto and then becomes a tenor; each voice type has its own specified range. However, most educators would disagree on the upper pitches of the alto-tenor or the tenor (Figure 1). In another set of ranges, McKenzie tries to classify bass voices according to grade (Figure 2). However, boys' voices do not mature at the same rate, so to classify by grade is far too simplistic.

⁶ Ibid.

⁷ McKenzie, Duncan. 1956. *Training the Boy's Changing Voice*. First Edition. Rutgers Univ Pr.



Figure 1. McKenzie's Range Chart for the Developing Male Voice.

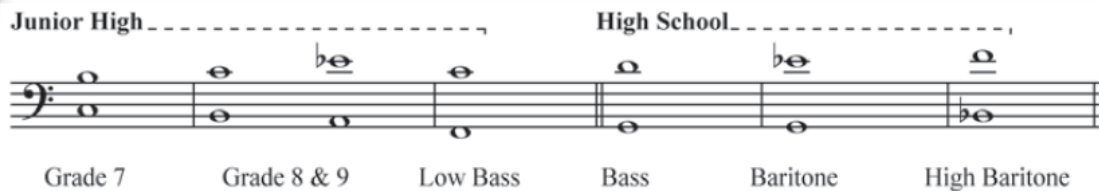


Figure 2. McKenzie's Range Chart for Boy Bases.

Poliniak asks in her article: "Who wants to be an alto?" A common perception among female choristers is "high" is good. The best singers are those who sing the highest, and therefore it is more desirable to be a soprano than an alto. This can wreak havoc on the soprano-to-alto ratio of an ensemble, and individuals may become discouraged if they were "forced" into a lower voice part.⁸ Like Leck, Poliniak claims it is important not to label voice parts too early, especially in choir. In elementary choirs where everyone is a treble voice, singers should be encouraged to develop all parts of their ranges through the rotation of part assignments. Practices to help balance the visibility of each voice part are important because young singers may consider one voice part is more important than another. In this instance, the opinions of the students are more detrimental than helpful in determining voice part. Rather than assigning parts

⁸ Poliniak, S. (2010). Chorus and Vocal. *Teaching Music*, 17(6), 55–55.

at random or at the sheer will, the teacher should create an environment where all parts are equally important.

Mabry's article "The Road Not Taken" from the *Journal of Singing* provides a useful description of "cross-singing", which is singing a voice part not originally intended for your voice part, especially that of the opposite gender. The reason for doing so comes from artists' desire to bring in new audiences and break traditions. The author does warn singers that because the repertoire is made a certain voice, vocal stress can be a result as well as the accompaniment being too dense for your voice color to be heard.

LoVetri's article "The Necessity of Using Functional Training in the Independent Studio" from the *Journal of Singing* helps explain why it is important for a voice teacher to be able to recognize an unhealthy voice by having a good working relationship with a speech-language pathologist that knows about the voice. LoVetri also emphasizes "functional training", which is any technique that allows a vocalist to gradually develop mechanical control over any sung sound without sacrificing freedom or authenticity. This is regardless of voice type. She doesn't mention classification, but rather the voice is adaptable to many different styles and no one is born with a "certain kind of voice".

Roers, Mürbe, and Sundberg's article "Voice Classification and Vocal Tract of Singers: A Study of X-ray Images and Morphology" from *The Journal of the Acoustical Society of America* provides a useful description of classifying voice types by vocal tract length. Basses had the longest vocal tracts and sopranos had the short vocal tracts. Neighboring voice types, such as alto and tenor, tend to have some overlap. Body weight and height were also examined to see if they had any correlation with vocal tract length. However, there was no such correlation. The system

of classifying voice types by vocal tract length would have to be further refined if it were to become a standard practice.

Johnson and Kempster's article "Classification of the Classical Male Singing Voice Using Long-Term Average Spectrum" from the *Journal of Voice* provides a useful description of one method that attempts to standardize voice classification using Long-term average spectrum. This is a very interesting take on classifying voice. The study asks a singer to sing a song in his most comfortable key. This study seems to only consider vocal range, which is what choral settings do.

Edwin's article "Pedagogic Pears: Exploring Vocal Resonance" from the *Journal of Singing* provides a useful description of a vocal exercise that can be used to help diagnose voice type. This vocal exercise revolves around how much *scuro*, or darkness, a voice can handle. It reinforces the concept of over darkening is detrimental to the singer.

Pribuisiene, Uloza, and Kardisiene's article "Voice Characteristics of Children Aged Between 6 and 13 Years: Impact of Age, Gender, and Vocal Training" from the *Logopedics Phoniatrics Vocology* helps explain why it's important to not classify voices too early. Before puberty, male and females have very little difference. Therefore, it is more beneficial to train the voice in a gender-neutral way.

In *Training Tenor Voices*, Miller claims that tenors have two specific passaggi. He says the first passaggio is around D4, and the second around G4 for a lyric tenor.⁹ Miller is very specific in his use of primo passaggio to classify fachs of tenors. A leggier tenor, he claims, has passaggi around E4-flat and A4-flat, whereas a spinto lyric tenor has passaggi around C4-sharp and F4-sharp.³⁶ His claim is that a range of about a perfect fourth separates all tenor

⁹ Miller, R. (1993). *Training Tenor Voices* (1 edition). New York: Toronto: New York: Cengage Learning.

passaggi. He also believes that the lower the primo passaggi are in pitch the more dramatic and heavy is the voice type.

Sasnett's article "Twenty-Five Works for Dramatic Soprano Voice and Orchestra" from the *Journal of Singing* makes the important point that singers sometimes move from one Fach to another. Sometimes they may sing in two neighboring Fachs.

Within the *Journal of Singing*, Myers provides Louis Graveure's, a renowned baritone from the early 20th century, take on vocal classification. Graveure is against strictly classifying a voice as lyric or dramatic. Singers must learn sing both lyric and dramatic.

In McGinnis' book *The Opera Singer's Career Guide: Understanding the European Fach System*, the Fach system is laid out in such a way that it is helpful for singers who want to find repertoire appropriate for them. Fach is defined as a system used by European opera houses to hire singers and cast their operas, and by opera singers to ensure the longevity of their careers.¹⁰ The longevity of operatic careers was ensured because the Fach system prevented singers from being asked to sing inappropriate repertoire that would be harmful to their voices. Voice categories are not meant to constrain singers but are meant to guide a voice toward appropriate repertoire, to help guard it from going off in several directions at once. Even though Fach is labeled as specific voice categories, such as lyric soprano, more than just range is considered for determining Fach. Fach is composed of voice, range, size, timbre, and physical build, according to McGinnis. She also warns singers about singing too dramatic, or dark, and copying other singers who may be more developed in their voice.

In her paper *Voice Classification and Fach: Recent, Historical and Conflicting Systems of Voice Categorization*, Sandra Cotton claims:

¹⁰ McGinnis, P. Y. (2010). *The Opera Singer's Career Guide: Understanding the European Fach System*. Scarecrow Press.

A more thorough understanding of the importance of the physiological dimensions of the vocal instrument in pre-determining the potentials and limitations of any given instrument will doubtlessly lead to more accurate voice classification in the future. Yet the controversy of which operatic repertoire is appropriate for a given singer will continue to haunt teachers and singers alike as long as Fach, the system of categorization of roles, continues to be treated as a synonym of voice type.¹¹

The Fach system is helpful for determining whether a singer is ready to audition or be hired. A significant duty of the voice teacher is to help the student prepare an "audition package". This selection of arias for this package depends not only on the vocal qualities and restrictions of the singer in question, but also on current casting trends and market expectations. To offer an aria in the package that does not fit the current conception of that particular voice type is to run the risk of exclusion from invitations to audition.¹² Inappropriate repertoire offers an easy means to exclude those singers who are not yet ready to be heard. This process of reducing the applicant pool to a feasible number of singers is necessary for companies to save time and money.

The Fach system is an evolving system. The system was indeed organized according to voice type, however its fluidity demands separation from voice type. Despite the fact that Fach listings carry the titles of particular voice types, to consider Fach and voice classification synonymous would be to allow for the possibility that voice classification, like Fach, is dependent upon market trends. What years ago was primarily a question of range has become, in recent decades, a myriad of questions including categories such as register breaks (*passaggio*), timbre, zones of ease of production (*tessitura*), and degree of agility.¹³ Voice classification is controversial because there is no universal standard to determining voice type. Cotton hypothesizes the amount of guesswork involved in assessing the potential of a young instrument could be reduced via computer imaging technology which would be able to assess the laryngeal

¹¹ Cotton, S., (Author). (2012). Fach vs. voice type: A call for critical discussion. *Journal of Singing: The Official Journal of the National Association of Teachers of Singing*, 69(2), 153–166.

¹² Ibid.

¹³ Ibid.

physiology and resonance cavities and thereby offer the actual physiological capabilities and limitations of the instrument while at rest, allowing for the singer's technique to play no role in consideration.¹⁴

The two leading sources for the Fach system are by Richard Boldrey's *Guide to Operatic Roles & Arias* and Rudolf Kloiber's *Handbuch der Oper*. Discrepancies between these two guides are less concerned with voice type and more with audience preferences.

Despite a growing body of information proving voice classification to be based on the size and density of vocal folds and the size and shape of the vocal tract, and thus largely quantifiable, classification remains a controversial subject among singers and pedagogues.¹⁵ Teachers must listen for potential sound as much as actual sound. However the degree of success that is achieved varies greatly from teacher to teacher, as can be observed in numerous anecdotal accounts of misclassification. Most pedagogues will agree that range, tessitura, agility, and timbre are significant criteria for voice classification. The number of books available on training particular voice types is evidence enough that not all teachers approach voice teaching independent of the classification. When training is dependent upon voice type, the dangers of misclassification include the likelihood that the discovery of the actual vocal potential will be further delayed.¹⁶ On the other end of the spectrum, pedagogues who delay classification and focus primarily on teaching a student simply to sing well and efficiently will fall short in preparing singers for the marketplace if they do not ready their students for the inevitable questions about voice type. While this is more of a potential hindrance for advanced singers, the question of classification is raised at all levels of training.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

Doscher, a sage pedagogue, regarded range as "probably the least reliable and the most dangerous way to classify a voice."¹⁷ He believed ranges can bob up and down like a yo-yo, and a conclusive range is almost always a product of vocal maturity and, as such, is of little use as a tool to classify voices during training. Doscher defines tessitura as "a certain compass in which the voice performs with special ease of production and sound."¹⁸ Tessitura can be used to determine voice type. However, it is possible for a singer to find a slight shift in tessitura with improved technique. Cotton states *passagi*, or vocal breaks, remains one of the best ways to determine voice type, particularly at the beginning stages. In the later stages, when *passagio* issues are reduced to a minimum, tessitura becomes one of the most important considerations for voice classification because it is where the singer can sing with the most ease with excellent technique. Timbre is important in considering which sub-category of voice type, either lyric or dramatic. However, because young students can misclassify themselves and adopt a wrong tonal image, it is less useful for determining voice type. At best, when misclassification occurs, a singer's potential is never realized, but at the worst, permanent vocal damage results.

Even though Cotton admits more research is necessary, she suggests that the vocal tract determines timbre when not manipulated, and the vocal folds determine range.

Voice classification today is different than it was at various points in history. Range seems to have been the primary criterion for categorization for Garcia, a well-known pedagogue, with timbre ascribed more as a set of options for singing than a characteristic for distinction.

One of main reasons why voice type and Fach should be considered separate entities is because Fach is dependent on casting trends and market demands. For instance, a role that was originally written for a light tenor may now be sung by a heavier tenor solely because of

¹⁷ Doscher, *The Functional Unity of the Singing Voice*, 2nd ed. Metuchen, NJ: The Scarecrow Press, Inc., 1994, 196.

¹⁸ *Ibid.*

audience preferences. The vocal requirements of the role did not change, so the heavier tenor may be asked to sing in a register that is uncomfortable or too high for him to sustain. Voice type, however, is independent from market demands and casting trends. If voice classification comes to be understood as a physiological fact or instrument type, and Fach is recognized as a grouping of roles that share either vocal or character traits, it should eventually be possible for singers to perform in more than one Fach.¹⁹

In Seesholtz's article "The Origin of the Verdi Baritone" from the *Journal of Singing*, Verdi Baritones are described as a recent invention. They may have existed before Verdi, but it was Verdi that popularized the Fach. The main aspect of the Verdi Baritone is that it utilizes almost exclusively the upper fifth of a baritone's normal range. Many pedagogues say this is detrimental to the voice because it is so taxing. The title role of *Rigoletto* is a prime example of this voice type. It truly is a test of power, endurance, and range. The Verdi Baritone is an example of market demand that created a Fach that asked one particular voice type to meet its demands.

In his paper *The Evolution of the Heldentenor: Siegmund, Grimes, Samson, and Otello*, James Henry Seay, III provides a historical account of how the Heldentenor voice type, or heroic tenor, came to be. The origin of the Heldentenor classification can be traced back to the abrupt change in the performance practice of the upper register of the tenor voice with the now famous performance of the full-throated, chest high Cs in Rossini's *Guillaume Tell* sung by Gilbert-Louis Duprez (1806-1896). Before Duprez, dramatic tenors would use reinforced falsetto to access high Cs, which were produced with ease but lacked power. Nourrit, a leading tenor of the Paris Opéra, could not keep up with the demand of the new voice type, so he committed suicide after

¹⁹ Cotton, S., (Author). (2012). Fach vs. voice type: A call for critical discussion. *Journal of Singing: The Official Journal of the National Association of Teachers of Singing*, 69(2), 153–166.

Duprez succeeded him. This shift in pedagogy is one of the rare times that voice type was affected by market demand.

Methodology

The objective of this research is to collect the different methods of determining voice type and what aspects make up a voice type. Journals, articles, and training manuals will be considered if they have the words vocal classification in them. Only literature found on the internet that is readily available will be considered. Most data I will find will be qualitative, however, I do suspect finding some quantitative data, such as vocal tract length and how it correlates to voice type. I expect to find conflicting schools of thought, however I do plan on finding one that is the most methodical and persuasive.

Conclusion

For younger unchanged male voices, classification has less significant role in vocal progress. However, the vocal community seems to agree that labels such as "soprano" and "alto" should be avoided at this stage. When determining young changing male voices, passagio is good and valuable tool to use to determine what voice type one could possibly train in. However, as vocal progress occurs, tessitura is the most important criterion to consider when determining voice type. Fach and voice type should not be used synonymously because the criteria for their individual categories are not exactly the same. The categories do share some criteria however. To better train our singers, labels shouldn't be avoided, but range should not be the key determining factor of voice type. Some attempts were made to make voice classification more quantifiable and standardized. However universal consensus has not been reached. As voice science progresses, voice types may be able to determine more physiologically than subjectively and acoustically.

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